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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,989	07/15/2003	Giora Biran	IL920000078US1	8807

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EXAMINER

NGUYEN, TANH Q

ART UNIT	PAPER NUMBER
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2182

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/619,989

Applicant(s)

BIRAN ET AL.

Examiner

Tanh Q. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114.

Applicant's amendment to the specification, filed on September 6, 2005, has not been entered because the amendment is improper. Since the application originally claims the benefit under 35 U.S.C. 120 of any United States Application(s) or 365(c) of any PCT International application designating the United States (as is indicated on the declaration filed November 17, 2003), it is improper to amend the specification to indicate the application being filed under 35 U.S.C. 371.

Since the petition to withdraw from issuance was filed in order to provide the relationship information [that is a continuation] for the claim of priority from PCT/IB01/00121, filed on Jan. 31, 2001 (see Petition to Withdraw from Issuance 37 CFR 1.313(c)2 filed September 6, 2005), the specification needs to be amended to contain a reference to the international application number and international filing date and indicating the relationship of the applications (i.e. continuation, continuation-in-part, or division). See 37 CFR 1.78(a)(2)(i) and MPEP § 201.11. An example of an appropriate first sentence of the specification is, for example, "This is a continuation of

International Application PCT/EP2004/000000, with an international filing date of January 5, 2004, now abandoned."

Furthermore, since the reference is not submitted in accordance with 37 CFR 1.78(a)(2)(ii), applicant needs to file a petition under 37 CFR 1.78(a)(3) to have the reference accepted if the submission of the reference was unintentionally delayed.

Applicant also needs to certify that the international application was not withdrawn or considered to be withdrawn, either generally or as to the United States, prior to the filing date of the national application claiming benefit under 35 U.S.C. 120 and 365(c) to such international application to support copendency with the prior international application (see MPEP 1895.01 [R-2]) - as the USPTO was not the receiving Office of the international application file.

Claim Objections

2. Claims 8-10, 17-20 are objected to because of the following informalities: applicant applies shorthand drafting to make the claims appear to be dependent. The aforementioned claims are, however, clearly independent claims as indicated by their distinct preambles. Applicant's Deposit Account # 09-0468 will be charged \$1200.00 for six independent claims that are in excess of the basic three independent claims - per 37 CFR 1.16(h), and as authorized in the July 15, 2003 Transmittal Letter.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Page 40, lines 3-5 discloses "The payload portion comprises a plurality of fields each containing the identity of the LCP channel that indicated the completion event". It appears that the cited portion only supports a payload portion having a plurality of fields, each corresponding to one of the ports - rather than to a different one of the ports.

In the example of FIG. 18, there are 28 fields in the payload portion. Each field of payload portion contains the identity of the LCP channel (ports) that indicated the completion event (the interrupt) - hence a payload portion having a plurality of fields, each corresponding to one of the ports. The limitation "a plurality of fields each corresponding to a different one of the port" would require 28 different ports, and such limitation appears not to be supported by the specification.

Furthermore, it appears that there is no support for "moving the contents of the buffer to the corresponding fields of the payload portion" - as page 38, lines 25-26 merely discloses "when preset conditions are met, an Interrupt Control Block (ICB) 1680 is generated by the ISOC 120 from the information stored in the interrupt FIFO 1660".

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Andrews et al. (USP 5,968,158)** in view of **Satran et al. (USP 6,430,183)**.

8. As per claim 1, **Andrews** teaches an apparatus [12-0, FIG. 5] comprising:
a buffer [68-0, FIG. 5; 90, FIG. 6] for storing indications of interrupts [INT BLOCK 1-INT BLOCK N, FIG. 6] generated by ports [75, 86, port connected to PCI BUS 48 - FIG. 5] of a peripheral device [10, FIG. 1], the peripheral device having a plurality of ports [70-1, 75, 86, port of 12-0 connected to PCI BUS 48, port of 12-1 connected to

PCI BUS 48... of FIG. 5], said apparatus for transferring interrupts from the peripheral device to a host computer system [2, 4, FIG. 1: col. 10, lines 55-59], and

a controller [64-0, FIG. 5; DMA: col. 11, line 51] for, in response to a preset condition being met [col. 11, lines 8-47], generating a control data block [a DMA data block], and sending the contents of the buffer to the host computer system via one of the ports [port connected to PCI BUS 48, FIG. 5].

Andrews essentially teaches transferring indications of interrupts from the buffer to the host computer system using DMA, instead of using a control data block comprising a payload portion having a plurality of fields each corresponding to one of the ports and a header portion having an identifier for identifying the control data block, moving the contents of the buffer to the fields of the payload portion, and sending the control data block to the host computer system via one of the ports.

Satran teaches a control data block [First Packet Type, FIG. 2] comprising a payload portion [220, 230, FIG. 2] having a plurality of fields [a plurality of block header [220, FIG. 2] and payload data [230, FIG. 2] sections: col. 5, lines 9-15] each corresponding to a data block to be transmitted, and a header portion [210, FIG. 2] having an identifier [211, FIG. 2] for identifying the control data block [col. 4, lines 17-32], moving the contents of a buffer to the fields of the payload portion [data blocks to be transmitted originating from a single source: col. 4, lines 3-4], and sending the control data block to a receiver [140, FIG. 1] via a port of transmitter [110, FIG. 1].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a control data block, as is taught by Satran, in order to

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transfer a plurality of indications of interrupts from the peripheral device to a host computer via the port connected to PCI BUS 48 - as an alternative to using DMA to transfer the plurality of indications of interrupts from the peripheral device to a host computer.

It is further noted that in a specific instance where the buffer contains only one indication of interrupt per port - for a plurality of ports, and the payload portion contains only a number of fields corresponding to the number of ports, each field of the payload portion would correspond to a different one of the ports, and the contents of the buffer are moved to the corresponding fields of the payload portion.

9. As per claims 2-4, Andrews teaches the preset condition comprising a determination that the buffer is full [col. 11, lines 22-27: with the predetermined limit being set to the size of the buffer];

the preset condition comprising a determination that at least a predetermined plurality of indications is stored in the buffer and that a predetermined period has elapsed [col. 11, lines 35-40];

the preset condition comprising a determination that at least one indication is stored in the buffer and that a predetermined period has elapsed [col. 11, line 28-35]

10. As per claim 5, Satran does not specifically teach the header portion comprising a count indicative of the number of indications included in the payload portion. Since it was known in the art at the time the invention was made to use a count in a header of a packet to indicate the number data blocks contained in the packet - for packets with multiple data blocks, it would have been obvious to one of ordinary skill in the art at the

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time the invention was made to include a count in the header portion of the control data block in order to indicate of the number of indications of interrupts included in the payload portion of the control data block.

11. As per claim 6, Satran does not teach the header portion comprising a time of day stamp. Since it was known in the art at the time the invention was made to include a time of day stamp to keep track of the packet processing order to maintain coherency, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a time of day stamp in the header portion of the control data block in order to keep track of the order for processing the control data block.

12. As per claim 7, Andrews teaches the buffer comprising a FIFO memory buffer [col. 10, line 60-col. 11, line 7].

13. As per claims 8-10, Andrew teaches a peripheral device [10, FIG. 1] comprising the apparatus [12-0, FIG. 5];

a data communications network interface [10, FIG. 1] comprising the peripheral device;

a data processing system [FIG. 1] comprising a host processing system [2, 4, FIG. 1] having a memory [89, FIG. 5], a data communications interface [4, FIG. 5] for communicating data between the host computer system and a data communications network [8, FIG. 1], and the apparatus [12-0, FIG. 1], for controlling flow of interrupts from the data communication interface to the memory of the host computer system.

14. As per claims 11-20, claims 11-16 generally correspond to claims 1-5, 7 - and are rejected on the same basis as claims 1-5, 7;

claim 17 generally corresponds to claim 1, and is rejected on the same basis as claim 1;

claim 18 generally corresponds to claim 10, and is rejected on the same basis as claim 10;

claims 19-20 generally correspond to claim 11, and are rejected on the same basis as claim 11.

Response to Arguments

15. Applicant's arguments filed September 6, 2005 with respect to the specification have been fully considered and addressed in the action.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Quang Nguyen whose telephone number is (571) 272-4154 and whose e-mail address is tanh.nguyen36@uspto.gov. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici, can be reached on (571) 272-4083. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300 for After Final, Official, and Customer Services, or (571) 273-4154 for Draft to the Examiner (please label "PROPOSED" or "DRAFT").

Effective May 1, 2003 a new mailing address is:

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Arjun K. Patel
09/19/2005

TQN
September 18, 2005